

REMARKS

This Amendment is responsive to the Office Action mailed on January 30, 2004.

The specification is objected as it contains a hyperlink and a typographical error. The specification is amended herein to delete the hyperlink as required by the Examiner and to correct the typographical error.

Claims 1-3, 7, 9, 11, 14, 15, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over an article by Thrift entitled "Java Enabled Television", in view of Gong (US 6,047,377) and Anand (US 6,044,466).

Claims 1-6, 8, 10, 12, 13, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis (US 6,665,869) in view of McRae (US 6,115,079).

Claims 1 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Thrift in view of Gong and Ahmad (US 5,925,127).

Applicants respectfully traverse these rejections in view of the comments which follow.

Response to Rejections Based on Thrift in View of Gong and Anand

Claims 1-3, 7, 9, 11, 14, 15, and 17 stand rejected as being unpatentable over an article by Thrift, in view of Gong and Anand.

Thrift describes the use of Java applets in a television environment. However, as acknowledged by the Examiner, Thrift does not address any security issues associated with the use or downloading of such applets.

The Examiner relies on Gong as disclosing "a method and apparatus for establishing and maintaining security rules in conjunction such as that utilized by received and executed 'software applications' such as those associated with the JAVA TM programming language in order to control television 'receiver functions'" (Office Action, page 3). Gong does disclose a Java security architecture which uses permissions to manage and control code executed by a computer system. Applicant respectfully submit that the present invention is an extension of the Java security architecture disclosed in Gong. Applicant has referred to an article by Gong entitled

“Java Security Architecture” referenced on page 4, lines 11-13 of Applicant’s specification, which essentially summarizes the disclosure of the Gong patent. Applicant’s disclosure at pages 4-6 discusses how the present invention extends the security architecture provided by Gong.

Gong does not disclose or remotely suggest using conditions corresponding to the current state of the receiver in connection with permissions for controlling an application’s access to a function of the receiver, as claimed by Applicant. With Applicant’s claimed invention, it is determined whether an associated security policy of a software application contains a permission for the software application to access the receiver function. In addition, data defining a condition of the receiver under which access to the receiver function by the software application is permitted is provided. If the security policy of the software application contains the permission, then it will be determined whether the condition of the receiver is met by data indicative of the current state of the receiver. In Applicant’s system, both the permission must be present and the current state of the receiver must satisfy the condition before the software application can access the receiver function. Therefore, Applicant’s security system is dynamic, in that it is dependent on the current state of the receiver, which can change frequently. In contrast to Applicant’s invention, Gong merely provides static permissions for accessing functions of a receiver, and does not disclose the use of additional conditions in connection with the permissions.

The Examiner has cited to Col. 16, lines 47-55 of Gong as disclosing the use of conditions as claimed by Applicant (Office Action, page 4). The cited passage of Gong mentions that a bank account permission may have an action, an account, and a maximum amount attribute. The action, account, and maximum amount are part of the permission or instructions (Col. 16, lines 9-22), and are not a condition of the receiver as claimed by Applicant. As set forth, for example, in Applicant’s claims 1-6, the condition claimed by Applicant may be: a conditional access state of the receiver, such as a blackout state, a pay-per-view state, or an authorization state; a user state, which may be defined by a user preference, a user password, or a user identifier; time, date, or day, or the like.

Gong does not disclose a dynamic security system as is provided by the present invention. For example, an ABC application may come with a policy that it can be run at the set-top box

only if it is authorized for the ABC services (e.g., ABC television channel). This is a static security policy. The box is either authorized or it is not. It is very easy to determine the authorization state of the box when evaluating this permission and it will always come back with the same answer. If an additional condition is added, such that the box must also be tuned to the ABC channel while running the ABC application (e.g., to make sure that the box is not running the CNN stock ticker application while tuned to BBC news), the evaluation of the permission to run the ABC application will come back with different answers depending on what channel the box is tuned to. In other words, the security of the present invention is dynamic in the sense that it is dependent on the current state of the receiver, which can change.

The Examiner has acknowledged that Gong does not disclose conditions which are related to a current state of the receiver (Office Action, page 4). The Examiner relies on Anand as disclosing the use of conditions relating to a current state of the receiver as claimed by Applicant (Office Action, page 4). Although Anand uses the term “dynamic derivation” of permissions (Col. 3, lines 23-27), this term is used in the context of delegating permissions from one user to another (Col. 3, lines 20-34), rather than in the context of permitting a software application to access a receiver function as claimed by Applicant. In other words, the conditions discussed in Anand must be satisfied in order to delegate permissions from one user to another. In Anand, once a permission is received, the receiver function may be accessed. Contrary to the present invention, in Anand there is no further check of a condition being met by a current state of the receiver after the permission is received, before the receiver function may be accessed, as claimed by Applicant. Anand therefore discloses a static security policy which is not related to the current state of the receiver.

Applicants respectfully submit that the present invention would not have been obvious to one skilled in the art in view of the combination of Thrift, Gong, and Anand, as none of the cited references discloses or remotely suggests the features of Applicant’s claims 1 and 17. In particular, the combination of Thrift, Gong, and Anand does not disclose or remotely suggest providing data defining a condition of the receiver under which access to the receiver function by the software application is permitted, determining if an associated security policy of the software

application contains a permission for the software application to access the receiver function, and if the permission is present, determining whether a condition of the receiver is met by data indicative of a current state of the receiver, as claimed by Applicant.

Applicant respectfully submits that the present invention would not have been obvious to one skilled in the art in view of the combination of Thrift, Gong, and Anand, or any of the other references of record.

Discussion of Rejection in View of Ellis and Macrae

Claims 1-6, 8, 10, 12, 13, 16, and 17 stand rejected as being unpatentable over Ellis in view of McRae.

Ellis discloses a program guide system which supports an interactive program guide and multiple non-guide applications, such as an Internet browser application, video-on-demand, electronic shopping, banking, and wagering, and the like (Col. 2, lines 1-15). The program guide application allows parents to lock programs using parental control resource 68a (Col. 6, lines 20-24).

Ellis does not disclose the use of any type of security policies controlling how applications are run at the terminal or how applications are allowed to access resources or functions of the terminal based on those security policies and related conditions of the terminal, as claimed by Applicant. Ellis does not disclose or remotely suggest the use of both permissions and conditions as claimed by Applicant. In particular, the EPG application with parental control of Ellis relied on by the Examiner does not have an associated security policy which contains a permission for the software application to access the receiver, as claimed by Applicant.

Further, the Examiner has also acknowledged that Ellis does not disclose Applicant's step of "determining whether said condition of the receiver is met by data indicative of a current state of the receiver" (Office Action, page 6). The Examiner relies on MacRae as disclosing this subject matter.

MacRae discloses a mechanism for parents to define a table or matrix that is stored by a

tuner in order to determine what channels are allowed to be tuned to, which can include the time of day, date, or other restrictions (Col. 4, lines 54-57). The disclosure of MacRae is a description of how parental ratings and other types of parental control for television viewing is accomplished on most televisions and set-top boxes. MacRae has nothing to do with downloadable applications, security policies for these applications, permissions for these applications, or conditions under which applications containing appropriate permissions can access functions of a television receiver, as claimed by Applicant.

The present invention advantageously uses a dynamic approach to providing access control for software applications. Unlike the present invention in which the end user and the content provider are both protected, with rating control schemes such as that disclosed in MacRae, only the end user is protected. With such prior art rating control, the end user is in charge of defining the security policy that applies (e.g., setting the conditions, rating ceiling and the password). In contrast, with the present invention, the network's service provider is in charge of defining the policy to protect the different content providers that are on the network. Prior art rating control schemes such as MacRae are static systems, since the channel is either always locked (the user does not have the password) or always accessible (the user has the password). Such systems are not dependent on the current state of the receiver.

In the present invention, the same application runs on certain channels but does not run on others, e.g., when the user tunes to another channel, sometimes the application stays on, and sometimes it is terminated, depending on the definition of the security policy. In the prior art rating mechanism, changing channels really means switching applications (considering a video channel an application). The present invention can accommodate multiple simultaneous applications (e.g., a data application running on top of a video channel), where changing channels sometimes leaves the same data application on, and sometimes does not, based on the security policy and the current state of the receiver (see, e.g., Applicant's specification, page 30, line 22 through page 32, line 22).

Such advantages are not provided by the disclosures of Ellis or MacRae, taken alone or in combination.

As neither Ellis nor MacRae disclose or remotely suggest: (a) determining whether an

associated security policy of an application contains a permission to access a receiver functions, (b) providing data defining a condition of the receiver under which access to the receiver function by the software application is permitted, and (c) determining whether the condition of the receiver is met by data indicative of a current state of the receiver, the combination of Ellis and MacRae would not have led one skilled in the art to Applicant's invention as suggested by the Examiner.

Discussion of Rejection in View of Thrift, Gong, and Ahmad

Claims 1 and 17 stand rejected as being unpatentable over Thrift in view of Gong and Ahmad. Thrift and Gong are discussed in detail above.

Ahmad discloses a system for monitoring the use of a rented software program. The Examiner indicates that Ahmad discloses an application having a security policy with a permission which allows or prevents the application from accessing a receiver function if the condition is met by data indicative of a current state of the receiver (Office Action, page 10). Applicant respectfully disagrees with the Examiner.

Ahmad is not concerned with digital television receivers as claimed by Applicant. Ahmad provides a Software Monitor which starts a timer to record the time of use of a rented software program for personal computers. The program may query the Software Monitor to determine if the licensed time of the program has expired (Col. 2, lines 62-67). Such a system is not tied to a current state of a digital television receiver, as claimed by Applicant. Further, the software program of Ahmad does not appear to have its own security policy and permissions. Instead, in Ahmad, the Software Monitor is a separate software module which is downloaded with the software program (Col. 2, lines 15-21). It does not control access to a receiver function.

Applicants respectfully submit that the present invention would not have been obvious to one skilled in the art in view of Thrift in view of Gong and Ahmad, as none of the cited references discloses or remotely suggests the features of Applicant's claims 1 and 17. In particular, the combination of Thrift, Gong, and Ahmad does not disclose or remotely suggest providing data defining a condition of the receiver under which access to the receiver function by

the software application is permitted, determining if an associated security policy of the software application contains a permission for the software application to access the receiver function, and if the permission is present, determining whether the condition of the receiver is met by data indicative of a current state of the receiver, as claimed by Applicant.

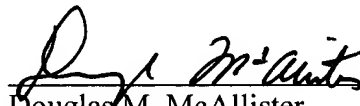
Further remarks regarding the asserted relationship between Applicant's claims and the prior art are not deemed necessary, in view of the above discussion. Applicant's silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Withdrawal of the rejections under 35 U.S.C. § 103(a) is therefore respectfully requested.

Conclusion

In view of the above, the Examiner is respectfully requested to reconsider this application, allow each of the presently pending claims, and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicant's undersigned attorney.

Respectfully submitted,



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